Tiny Pieces of Matter: Guided Notes

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Lesson:

Before you read: in your notes space, draw or describe what YOU think is inside a blown-up balloon. Then read the passages and examples below to learn how matter is made of tiny particles that are too small to see. As you read, check whether your drawing matches the big idea, and use the notes spaces to record key ideas.

> Matter is all around you. Some matter is easy to see, like a basketball or a balloon. Some matter is hard to see, because its pieces are so tiny. These tiny pieces are too small for your eyes to see, but they are still there.

Can you see it? It is still matter.

Matter you can see	Matter too small to see
basketball	air in a balloon
book on a shelf	popcorn smell from another room
chair next to a desk	sugar stirred into water

Both groups are matter. Being too small to see does not mean something is gone.

> Think about a balloon. Before you fill it, it looks empty. It is not really empty. Air is inside it, and air is matter. When air goes into the balloon, it pushes the sides out. That shows something is there, even when you cannot see it. Look back at your drawing — does it show something inside the balloon?

Smells can move too. If popcorn is cooking in another room, you may smell it before you see it. Tiny pieces from the smell travel through the air. They can move from place to place, even though you cannot see them.

Sugar can seem to disappear in water, but the sweetness stays. The sugar is still there, just spread out so well that you cannot see it anymore. This is another clue that matter can be made of tiny pieces.

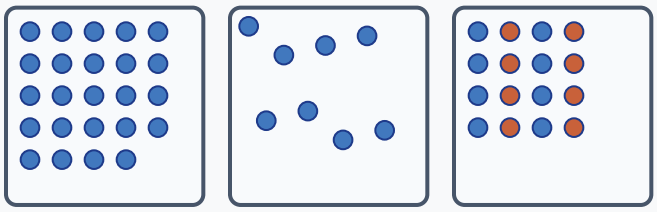
Three clues that matter is made of tiny pieces

	What you notice	What it tells us
Balloon	It puffs up and pushes the sides out	Air is in there and takes up space
Popcorn smell	You smell it from another room	Tiny pieces travel through the air
Sugar in water	It vanishes but the water tastes sweet	It is still there, just spread out

You cannot see the pieces in any of these clues. You can only see what they do.

Today's big idea is this: matter is made of tiny particles that are too small to see. We can know they are there by what they do, such as filling a balloon, carrying a smell, or changing water taste.

Tiny particles of matter



solid
Basketball (you can

gas
Air in a balloon (too

mixture
Sugar in water (still

All three are matter. The particles are packed close, spread far apart, or mixed in - but they are always there.

A balloon looks empty, but air inside it takes up space.

Popcorn smell can travel from one room to another room.

Sugar seems to vanish in water, but the sweet taste shows it is still there.

Instructions:

Read each note, think carefully, and choose the best answer. Some questions check what the lesson said, and some ask you to notice mistakes or compare ideas. Use the hints if you need help.

1. Which statement best matches the big idea of this lesson?

- ◯ A) Only large objects are matter.
- ◯ B) Matter is made of tiny particles that are too small to see.
- ◯ C) Matter disappears when we cannot see it.
- ◯ D) Only water is matter.

2. A student says, 'A balloon looks empty, so there is nothing inside.' What is wrong with that idea?

- ◯ A) The balloon is filled with water.
- ◯ B) The balloon only has color inside it.
- ◯ C) The balloon is truly empty.
- ◯ D) Air is inside the balloon, even though we cannot see it.

3. Which example shows matter that is hard to see because it is made of tiny pieces?

- ◯ A) A book on a shelf
- ◯ B) A desk in the classroom
- ◯ C) A basketball sitting on the floor
- ◯ D) Popcorn smell coming from another room

4. A teacher writes these notes: Balloon: air goes in and pushes the sides out. Which idea does this show?

- ◯ A) Air is inside the balloon and takes up space.
- ◯ B) The balloon is made only of smell.
- ◯ C) The balloon has no matter inside it.
- ◯ D) The balloon gets bigger by itself.

5. Which choice best explains why you can smell perfume from another room?

- ◯ A) The other room becomes brighter.
- ◯ B) Tiny pieces from the smell travel through the air.
- ◯ C) The perfume turns into music.
- ◯ D) The perfume only works in silence.

6. Which statement compares the balloon and the popcorn smell correctly?

- ◯ A) The balloon shows air filling space, and the smell shows tiny pieces moving.
- ◯ B) The balloon shows sound moving, and the smell shows light moving.
- ◯ C) Both examples show things that are not matter.
- ◯ D) Both examples show matter that is easy to see.

7. A student says, 'Sugar disappears in water, so it is gone.' What is the best correction?

- ◯ A) The sugar is gone forever.
- ◯ B) The water removes all matter.
- ◯ C) The sugar changes into air.
- ◯ D) The sugar is still there, but spread out.

8. Which example best matches the idea that matter can be hard to see?

- ◯ A) Sugar stirred into water
- ◯ B) A chair next to a desk
- ◯ C) A baseball glove on a table
- ◯ D) A crayon in a box

9. A student says, 'If I cannot see it, it cannot be matter.' Why is that statement wrong?

- ◯ A) Because matter always looks colorful.
- ◯ B) Because all matter is made of glass.
- ◯ C) Because matter can be invisible and still be there.
- ◯ D) Because only light can be seen.

10. A student inflates a basketball with air. Which clue shows that matter is inside the ball and taking up space?

- ◯ A) The basketball gets lighter.
- ◯ B) The basketball changes shape and becomes bigger.
- ◯ C) The basketball turns a different color.
- ◯ D) The basketball starts to smell like perfume.

11. A teacher says, 'Think about what a balloon does when air goes in.' Which answer best explains why this helps us learn about matter?

- ◯ A) It shows air is not matter.
- ◯ B) It shows balloons are living things.
- ◯ C) It shows only solid things are matter.
- ◯ D) It shows matter can be too small to see, but still take up space.

12. Which choice is the best summary of the three lesson clues: balloon, smell, and sugar in water?

- ◯ A) Only big objects are matter.
- ◯ B) Matter can be too small to see, but it is still there.
- ◯ C) Smells and sugar are not connected to matter.
- ◯ D) Matter always disappears when it changes form.

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(Answer Key)

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1. Which statement best matches the big idea of this lesson?
Hint: Look for the sentence about tiny pieces.

Answer: B) Matter is made of tiny particles that are too small to see.

Explanation: The lesson says matter is made of tiny particles that are too small to see, but they are still there.

2. A student says, 'A balloon looks empty, so there is nothing inside.' What is wrong with that idea?
Hint: Think about what happens when air is put into a balloon.

Answer: D) Air is inside the balloon, even though we cannot see it.

Explanation: The balloon is not truly empty. Air is inside it, and air takes up space.

3. Which example shows matter that is hard to see because it is made of tiny pieces?
Hint: Choose the example from the lesson about smell.

Answer: D) Popcorn smell coming from another room

Explanation: The lesson explains that smell particles can travel through the air, so you may smell popcorn before you see it.

4. A teacher writes these notes: Balloon: air goes in and pushes the sides out. Which idea does this show?
Hint: What does pushing the sides out tell you?

Answer: A) Air is inside the balloon and takes up space.

Explanation: If the balloon stretches, something inside is taking up space. In this lesson, that something is air.

5. Which choice best explains why you can smell perfume from another room?
Hint: The lesson says tiny pieces can move through the air.

Answer: B) Tiny pieces from the smell travel through the air.

Explanation: Tiny pieces from the smell move through the air, so the perfume can reach you.

6. Which statement compares the balloon and the popcorn smell correctly?
Hint: Both examples show something you cannot see directly.

Answer: A) The balloon shows air filling space, and the smell shows tiny pieces moving.

Explanation: Both examples show tiny pieces of matter. Air fills the balloon, and smell pieces travel through the air.

7. A student says, 'Sugar disappears in water, so it is gone.' What is the best correction?
Hint: Think about the sweet taste after the sugar seems to vanish.

Answer: D) The sugar is still there, but spread out.

Explanation: The sugar is still in the water. It spreads out so well that you cannot see it, but the sweetness remains.

8. Which example best matches the idea that matter can be hard to see?
Hint: Choose the example with something tiny or spread out.

Answer: A) Sugar stirred into water

Explanation: Sugar in water can be hard to see because it spreads out, but it is still there.

9. A student says, 'If I cannot see it, it cannot be matter.' Why is that statement wrong?
Hint: Remember the balloon and smell examples.

Answer: C) Because matter can be invisible and still be there.

Explanation: Some matter is too small to see, but it is still there and can do things like fill space or travel.

10. A student inflates a basketball with air. Which clue shows that matter is inside the ball and taking up space?
Hint: Think about what happens after air is added.

Answer: B) The basketball changes shape and becomes bigger.

Explanation: When air is added to a basketball, it pushes outward and makes the ball expand. That shows air is matter with particles that take up space.

11. A teacher says, 'Think about what a balloon does when air goes in.' Which answer best explains why this helps us learn about matter?
Hint: The lesson uses what the balloon does as a clue.

Answer: D) It shows matter can be too small to see, but still take up space.

Explanation: The balloon changes shape because air is inside it. That helps us know matter can be too small to see.

12. Which choice is the best summary of the three lesson clues: balloon, smell, and sugar in water?
Hint: All three clues point to the same big idea.

Answer: B) Matter can be too small to see, but it is still there.

Explanation: All three examples show that matter can be too small to see, yet it still exists and can affect things.